Spring 5-10-2024

# Evaluation of a Mothering Class for Refugee/Immigrant/Migrant Women on Patient Communication Self-Efficacy and Knowledge Acquisition

Armenda Bialas

ABSTRACT

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**INTRODUCTION:** Refugee/ immigrant/ and migrant (RIM) women are at particularly high risk of pregnancy-related health disparities in the United States. One strategy for addressing these health disparities and improving pregnancy- and childbirth-related outcomes is to provide RIM women with education about sexual and reproductive health (SRH) and maternal and child health (MCH) topics so that they are better able to effectively communicate with their health care provider. To this end, Embrace Refugee Birth Support provides a culturally tailored educational program, *Healthy Moms*, that provides expectant refugee women with information about SRH while emphasizing their health care right to make informed health decisions.
**METHODS:** An outcome evaluation of the *Healthy Moms* educational class series was conducted to evaluate the impact of the program. Using a pre-post evaluation design, participants (n=18) were evaluated on patient communication self-efficacy and sexual and maternal health knowledge acquisition. Data was collected separately between participants that were native to Afghanistan or African countries. Data was analyzed using descriptive statistics and paired sample t-tests (n=8).
**RESULTS:** Baseline SRH and MCH knowledge acquisition was measured among 18 participants. A one-way ANOVA revealed that there was a statistically significant difference in knowledge base between Afghanistan and African participants [$F(1, 15) = [11.833]$, $p=0.004$)]. A paired samples t-test showed that the participant's level of knowledge increased from baseline (Mean=9.75, SD=1.98) to follow-up (Mean=11.38, SD=2.67; $t(7)=-1.72$, $p=0.129$), though results were not statistically significant. A paired samples t-test showed that the participants' level of communication self-efficacy with providers increased from baseline (Mean=36.57, SD=8.73) to follow-up (Mean=46.00, SD=2.77; $t(6)=-2.92$, $p=0.027$). Participants reported a high level of program satisfaction (Mean=11.38, SD=0.74).
**DISCUSSION:** Across participants, the results indicated a significant increase in patient communication self-efficacy over the course of the program. This evaluation did not find significant increases in knowledge acquisition. Most notably, however, at program entry, the results revealed topic areas in which participants were relatively knowledgeable or demonstrated deficits. This finding may have important implications for the *Healthy Moms* curriculum development.

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MPH, Georgia State University

A Thesis Submitted to the Graduate Faculty
of Georgia State University in the Partial Fulfillment of the
Requirements for the Degree

MASTER OF PUBLIC HEALTH

School of Public Health
Georgia State University
Atlanta, Georgia

APPROVAL PAGE

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ACKNOWLEDGMENTS

The completion of this thesis is the culmination of efforts from various individuals with whom I would like to express my sincere appreciation.

Words are not enough to accurately portray my gratitude to Dr. Ashli Owen-Smith, my graduate research assistantship advisor and committee chair. This research would not have been possible without her invaluable expertise, guidance, feedback, and network in the Clarkston community.

I would also like to express my deepest appreciation to Virginia Tester for opening Embrace to me, trusting me to conduct this evaluation, and providing me with unwavering support throughout this journey. Thank you to Embrace staff members – Aku Dodge, Muzhda Oriakhil, Hasina Amiry, Josephine Mpagmye, Tarumbeta Obed, and Heidi Copeland – their enthusiasm, cooperation, and assistance in data collection were key in the success of this evaluation.

Lastly, I would like to thank my partner, Nicholas Clayton, for his constant encouragement. His support has been everything to me through the completion of my thesis and my career as a graduate student. I couldn't have done it without him.

AUTHOR'S STATEMENT

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# INTRODUCTION

A healthy pregnancy can be defined as a pregnancy that lasts nine months, results in a healthy baby that does not present birth defects and weighs at least five and a half pounds, and one in which good health is maintained overall for the mother (New York State Department of Health, 2006). Accordingly, it is critical for all women of childbearing age to prioritize their health and adopt healthy lifestyles, as a healthy pregnancy begins before conception and continues during and after pregnancy (CDC, 2023). A diet comprised of nutritious whole foods, daily exercise, regular prenatal care, low-stress levels, and the absence of risky behaviors (e.g., smoking and drinking alcohol) largely contribute to healthy pregnancies and improve infant health and wellbeing (CDC, 2023; Johns Hopkins Medicine, n.d.). Consequently, maternal and infant morbidity and mortality are primarily preventable and often result from poor health behaviors and ill-addressed health conditions or complications (WHO, 2023; CDC, 2023).

## Experiencing pregnancy and childbirth in the United States

Experiencing pregnancy and childbirth in the United States (U.S.) may also be a risk factor that women must take into consideration. The U.S. has a history of having an unacceptably high maternal mortality rate, which significantly exceeds other high-income countries (Gunja et al., 2023). For decades, maternal death ratios dropped, in the U.S., and around the globe, due to higher quality health care, the adoption of healthier lifestyles, and technological advancements (Gunja et al., 2022). Unfortunately, however, this trend was reversed in the U.S. around 2000 and has consistently been on the rise since (Declercq & Zephyrin, 2020). The recent global pandemic, COVID-19, has negatively impacted maternal mortality and pregnancy-related deaths due to limited access to care; however, as a result, the gap in maternal mortality rates between the U.S. and other high-income countries has widened. In 2019, just before the pandemic, the

maternal mortality rate in the U.S. was 17 deaths per 100,000 live births, approximately eight times higher than Norway, the country with the lowest maternal mortality rate at 2 deaths per 100,000 live births (Gunja et al., 2022). This dramatically increased in 2021 as the maternal death ratio in the U.S. increased to 32.9 deaths per 100,000 live births – a statistic that is more than ten times that of other high-income countries such as Norway, Netherlands, and Germany, among others (Gunja et al., 2023; Simmons-Duffin & Wroth, 2023). Notably, the Center for Disease Control and Prevention estimates 80% of pregnancy-related deaths are preventable (CDC, 2022). Several determinants are cited as contributing factors to the rising maternal mortality and pregnancy-related deaths rates in the U.S., including limited access to health care, inadequate prenatal care, high rates of cesarean section births, poverty, and chronic health conditions (Gunja et al., 2023; CDC, 2023). Furthermore, maternal health inequities among racial and ethnic minorities are prevalent as they experience disproportionately higher pregnancy-related deaths.

Significant racial and ethnic disparities have been observed in this realm as early as 1915 and continue to persist (Declercq & Zephyrin, 2020). The maternal death ratio among black women has consistently been two to three times higher than that of white and Hispanic women (Declercq & Zephyrin, 2020; Kekatos, 2022; Simmons-Duffin & Wroth, 2023; Ndugga, 2022). For instance, in 2020, the maternal mortality rate was 55.3 deaths per 100,000 live births among non-Hispanic black women, compared to white women (19.1 deaths per 100,000 births) (Kekatos, 2022; Simmons-Duffin & Wroth, 2023). Similar trends are also seen as it pertains to preterm births, low birth weight, and infant mortality (Ndugga, 2022). Factors that contribute to these disproportionate rates in infant and pregnancy-related morbidity and mortality among racial and ethnic minorities include variations in quality healthcare, underlying chronic

conditions, structural racism, and implicit bias (CDC, 2024). One study that evaluated childbirth experiences illustrated these points as results indicated that black women were more likely to experience discrimination by health care providers, less decision autonomy during childbirth, and pressure from health care providers to have a cesarean section (Declercq & Zephyrin, 2020). Understanding pregnancy-related mortality and morbidity determinants may help women who identify as a racial or ethnic minority address and mitigate pregnancy complications, by ensuring adequate prenatal care and adopting behaviors that reduce chronic disease. The provision of education on sexual and reproductive health (SRH) and maternal health topics may help address these racial and ethnic health disparities by allowing effective patient-provider communication and the knowledge to have a healthy pregnancy, delivery, and infant free from complications.

**Maternal and child health care for refugee/ immigrant/ migrant women**

With the pregnancy-related and racial disparities present in the U.S., refugee, immigrant, and migrant (RIM) women are particularly disadvantaged. It must be noted that this population is unequally affected by economic and social obstacles to health and healthcare, in general, before considering maternal health care (CDC, 2022). Challenges to accessing proper healthcare among RIM populations include limited English proficiency, communication barriers, high user fees or lack of health insurance, lower levels of health literacy, lack of transportation and financial resources, and the lack of linguistically and culturally responsive care (CDC, 2022; WHO, 2022; Embrace Refugee Birth Support, n.d.). In the context of pregnancy and childbirth, the complexity of barriers is heightened and nuanced, primarily due to differences in cultural practices and beliefs. Some cultures heavily stigmatize sexual health, which contributes to lower levels of sexual and reproductive health literacy and knowledge deficits (CDC, 2022; WHO, 2022; Embrace Refugee Birth Support, n.d.). Stigmatization and being in a foreign country can also

present difficulties in accessing sexual and maternal health information to improve health literacy (Embrace Refugee Birth Support, n.d.). Additionally, RIM women may have different cultural beliefs and practices around pregnancy, childbirth, and postpartum. Those who have given birth prior to resettling in the U.S. are more likely to have never given birth in a hospital setting and feel as through their pregnancy and childbirth knowledge does not translate to the same information in the U.S. (Cusick, 2021; Kirkendall & Dutt, 2023). Furthermore, evidence illustrates adverse outcomes for childbearing RIM women including late initiation and inconsistent prenatal care, higher rates of cesarean delivery, higher risk of preterm birth, infants with low birth weights, and a higher risk for postpartum depression (Kirkendall & Dutt, 2023; Cusick, 2021).

**RIM populations in Clarkston, Georgia**

Since 2010, Georgia has resettled nearly 30,000 refugees and is ranked among the top ten most welcoming states (International Rescue Committee, n.d.; USA for UNHCR, 2023). Indeed, ten percent of Georgia residents are foreign-born, and one in 13 U.S. native-born Georgians have at least one immigrant parent (American Immigration Council, n.d.). As Atlanta is one of the fastest growing cities in the U.S. and Georgia's largest, many refugees and immigrants reside in and around the populous city. Clarkston, a small suburb of Atlanta, has welcomed over 60,000 RIM individuals within the last four decades (USA for UNHCR, 2023). Dubbed "the most diverse square mile in America", approximately half of Clarkston's residents are foreign-born and represent over 65 countries and 60 languages (USA for UNHCR, 2023; The City of Clarkston, n.d.).

## RIM support agencies and programs

Given the deep-rooted global and linguistic diversity incorporated within Clarkston, several agencies and programs are missioned to connect RIM individuals to various resources needed to be self-sufficient. Friends of Refugees is a non-profit organization that is built on the notion that empowerment lays the foundation for self-sufficiency. This supports the organization's vision to "help refugees build abundant new lives in America". There are several programs within the organization, each designed to empower refugees through the provision of health and well-being, education, and employment opportunities (Friends of Refugees, n.d.).

One of the Friends of Refugees programs, Embrace Refugee Birth Support, referred to as Embrace, aims to address the many challenges RIM women experience during pregnancy and childbirth with a culturally sensitive approach (Embrace Refugee Birth Support, n.d.). The program educates and prepares women for the pregnancy, birth, and postpartum experiences they will encounter in the U.S., provides sources of emotional and social support, advocates for decision autonomy, and most importantly, empowers RIM mothers and mothers-to-be throughout their birth experience. Since its formation in 2010, Embrace has supported hundreds of RIM women, making profound impacts (Embrace Refugee Birth Support, n.d.). For instance, in just 2022, 256 hours of education classes were taught and 114 babies were born through the program (Friends of Refugees, n.d.).

## Purpose of the study

One of the main services offered through Embrace is an educational program named *Healthy Moms*. Through a series of eight weeks, the *Healthy Moms* classes teach expectant RIM women and mothers about prenatal care, childbirth, informed consent and patient rights, newborn care, breastfeeding, postpartum care, and women's health (Embrace Refugee Birth

Support, n.d.). As previously discussed, many RIM women have sexual and MCH knowledge gaps and are not culturally accustomed to hospital births (Cusick, 2021; Kirkendall & Dutt, 2023). Taking that into consideration, the *Healthy Moms* class series prepares women to navigate the U.S. healthcare system and provides them with information about common obstetrics interventions. A specific programmatic component of Embrace encourages each client to develop a standardized birth plan that can be used as a tool to communicate their decisions to healthcare providers. Due to the curricular content of *Healthy Moms*, Embrace participants can make informed decisions about their birth. Overall, the *Healthy Moms* series has been successful, demonstrated by various research publications that highlight client experiences and positive birth outcomes (Besera et al., 2023; Kirkendall & Dutt, 2023; Mosely et al., 2021; Vu et al., 2022). Certainly, other RIM-supporting organizations across the nation have gotten wind of such successes and have requested access to the curriculum for programmatic dissemination (Meyers, 2022). However, the *Healthy Moms* curriculum is Embrace's culturally sensitive adaptation of an existing evidence-based program (Evidence-Based Birth, n.d.). To date, a formal outcome evaluation of the *Healthy Moms* program has not yet been conducted to determine its effectiveness on other programmatic goals. Given the *Healthy Moms* curricular content and overall objective, this study aims to determine if the program increases health empowerment, using patient communication self-efficacy and sexual and maternal knowledge acquisition as indicators.

## LITERATURE REVIEW

The following section summarizes the research and literature published about sexual and reproductive health (SRH) and maternal and child health (MCH) knowledge gaps, patient-centered care (PCC) and patient-provider communication, and the role of culture in sexual and

maternal health care among RIM populations. While these topics were reviewed independently, it is important to consider the interplay that exists between knowledge, communication, and culture as it pertains to equitable health care.

**SRH and MCH knowledge gaps among RIM populations**

SRH is fundamental to health and well-being. The ability to attain good overall sexual health is dependent on several factors: access to accurate information about sex and sexuality, knowledge about sexual health risks, access to sexual health care, and cultural norms (WHO, 2023). Unfortunately, SRH knowledge and service utilization is particularly low among RIM women because of contextual and structural barriers (Ivanova et al., 2018; Svensson et al., 2017; McMichael & Gifford, 2009). As a result, this population has an increased risk of unplanned pregnancies and contracting sexually transmitted diseases (Milewski et al., 2021; Kaxzkowski & Swartout, 2020). Furthermore, in many RIM communities, SRH information is surrounded by negative cultural connotations and is a taboo topic that is not widely discussed (Svensson et al., 2016). Young RIM people have attributed their limited sexual health knowledge to breaks in schooling, long periods of living in refugee camps, and fewer opportunities to learn about SRH (McMichael & Gifford, 2009). Consequently, RIM individuals are at risk for obtaining incorrect information that can result in misconceptions and prejudiced beliefs that impede their ability to achieve SRH (Kaczkowski & Swartout, 2020).

Research assessing SRH knowledge among RIM populations is scarce yet this topic is slowly receiving more attention. Previous qualitative research studies among RIM women demonstrated inadequate SRH knowledge and misconceptions. A sample of migrant and refugee women in Australia and Canada identified limited knowledge in many areas of SRH such as menstruation and fertility, menopause, contraception, cervical screening, and sexually

transmissible infections. Many participants revealed significant inaccuracies such as thoughts that menstruation and menopause were illnesses and sexual health vaccines cause cancer (Metusela et al., 2017). Similar sentiments were expressed in Kaczkowski and Swartout's (2020) study that assessed gender differences in sexual health literacy. For instance, while women demonstrated more knowledge than men regarding contraceptives, they still believed them to be ineffective in pregnancy prevention (Kaczkowski & Swartout, 2020). Interestingly, another study evaluating sexual health literacy among refugees reported a recurring theme that women did not acknowledge they had the right to family planning and SRH care, which impacted their motivation to learn about sexual health (Svensson et al., 2017).

SRH knowledge deficits have been quantitatively cited in the literature among RIM populations as well. Descriptive studies that assessed the sexual health knowledge base among RIM individuals consistently reported a lack of knowledge and awareness. Maternal nutrition knowledge was evaluated among a sample of 100 Syrian refugees who were admitted into a hospital for labor and delivery. Over half of the participants were not knowledgeable about appropriate weight gain or nutrition during pregnancy (Harb et al., 2018). Similarly, a study involving young adult refugees found generally low knowledge pertaining to HIV and sexually transmitted infections, with mean correct scores of 57% and 33%, respectively (Dean et al., 2017). These findings are aligned with six other studies identified and described in a systematic review that evaluated SRH literacy among culturally diverse people in Australia (Lirios, et al., 2022). Milewski et al. (2021) compared sexual health knowledge among native U.S. citizens and female asylum seekers. Only ten participants were enrolled in the asylee group, however, their scores fell below the 25$^{th}$ percentile in all sexual health categories compared to U.S. citizens, who scored above the 75$^{th}$ percentile (Milewski, et al., 2021). As evidence suggests significant

SRH knowledge gaps among RIM individuals, it is imperative that sexual health education is prioritized to address negative misconceptions and improve SRH outcomes.

**SRH Patient-Centered Care and Patient-Provider Communication**

PCC is care that respects and responds to the needs, values, and desires of patients with compassion and empathy (AACN, n.d.). PCC aims to create an equal and collaborative relationship between patients and providers so that patients play a role in clinical decision-making (Reynolds, 2009; AACN, n.d.). In addition to a focus on respect and collaboration, the Institute of Medicine states that PCC must also (1) provide patients with education and communication, (2) ensure patients are comfortable, (3) provide patients with emotional support, and (4) involve family and friends in medical care, if authorized (Reynolds, 2009; AACN, n.d.; Tzelepis et al., 2015). Indeed, the provision of PCC can significantly influence the quality of care and patient satisfaction (Welkin, 2020). However, research suggests that communication, language, and culture play an instrumental role in the successful delivery of this care.

RIM populations often experience linguistic barriers when receiving health care in their resettlement country. Through narrative synthesis and thematic analysis of 21 studies, Patel and colleagues (2021) found that RIM patients who did not speak the language of their provider sometimes failed to understand the information and explanations provided to them. Other research suggests that these communication difficulties may result in lost trust and perceived healthcare discrimination (Paananen & Reza Majiles, 2018). Studies also cite similar barriers at the clinician-level, as providers have expressed challenges in relaying medical information in a way that is accessible to their RIM patients when cultural differences are present (Filler et al., 2020; Patel et al., 2021). RIM patients have reported provider use of hand gestures and the

dismissal of their concerns were barriers to effective communication (Patel et al., 2022; Patel et al., 2021).

While interpretation services are meant to bridge the linguistic gaps between patients and providers, they often present unique barriers of their own. For instance, female refugees settled in Georgia experienced situations in which interpreters inadequately communicated their health needs to providers. Some suggested that these instances negatively impacted their patient-provider relationship (Besera et al., 2023). Furthermore, both patients and clinicians have expressed that interpretation services are not always readily available (Mutitu et al., 2019; Patel et al., 2021). Through telephone interviews conducted with Irish providers with a RIM patient base, MacFarlane and colleagues (2008) found that only seven percent of healthcare providers could name a professional interpreting service. Out of convenience, most providers preferred informal interpreters, despite concerns about confidentiality and accuracy of translation when informal interpreters are used (McMichael & Gifford, 2009; Adair et al., 1999; Farley et al., 2014; Harris & Zwar, 2005; Jensen et al., 2013; MacFarlane et al., 2008). RIM individuals who have experienced trauma or received sexual health care have also reported concerns around confidentiality when working with an interpreter, especially in tight-knit communities where they are more likely to know each other (McMichael & Gifford, 2009; Patel et al., 2021).

Qualitative research studies have identified facilitators to provider engagement and PCC as it pertains to health care for RIM populations. In one study, refugees acknowledged positive patient-provider interactions that included active listening, responsiveness, and respectful or encouraging behavior (Besera et al., 2023). Isakson et al. (2023) found that RIM patients particularly valued empathetic providers who acknowledged their struggle in disclosing past experiences and were mindful of past trauma (Isakson, et al., 2023). In the same sentiment, a

recurring theme in Mutitu and colleagues' (2019) semi-structured interviews was the importance of open communication that allowed a chance to explain symptoms and concerns. RIM patients also appreciate when their provider follows up with them and genuinely cares about their health (Mutiut et al., 2019). A complex and intimate relationship exists between communication and culture, which is why the role of culture must also be considered as it pertains to sexual and maternal health care (Encyclopedia, n.d.).

**The Role of Culture in Sexual and Maternal Health Care**

Cultural differences and culture-related barriers are highlighted in the literature concerning SRH and maternal health care among RIM women. Evidence consistently illustrates that for many RIM populations, sexual health is a topic associated with shame and stigma (Svensson et al., 2017; Metusela et al., 2017; McMichael & Gifford, 2009; Lirios et al., 2022; Yeo et al., 2023). Lirios and colleagues (2022) identified seven studies in a systematic review that emphasized how SRH among RIM populations is influenced by culture. Each study discussed strong familial and cultural opinions on sex, sexually transmitted infections, and non-martial pregnancy. Discussion about and participation in such sexual health topics have the potential to compromise personal and family reputation (McMichael & Gifford, 2009). Indeed, a qualitative study found that participants believed that cervical screening threatened one's virginity (Metusela et al., 2017). Overall, shame and stigma were cited as barriers to sexual health literacy, especially among young people. One systematic review reported that such cultural beliefs resulted in school-based sexual health education being forbidden for young people in Sudan and Vietnam, among other countries. As it pertains to maternal health care, some cultures find the expression of pain during labor and delivery to be shameful, which can result in worse quality of care (Lirios et al., 2022). Moreover, in some cultures, prenatal and post-natal care are not

common practices and are only obtained if the woman or baby shows signs of illness (Yeo et al., 2023). Thus, it is imperative that these cultural beliefs and norms are understood and taken into consideration by healthcare providers to ensure high-quality SRH and MCH care.

The American Psychological Association defines cultural sensitivity as "awareness and appreciation of the values, norms, and beliefs characteristic of a cultural, ethnic, racial, or other group that is not one's own, accompanied by a willingness to adapt one's behavior accordingly" (American Psychological Association, n.d.). The United Nations Population Fund asserts that effective SRH care is achieved when the cultural dynamics of the community are understood by providers (United Nations Population Fund, n.d.). A qualitative implementation evaluation of a culturally sensitive SRH education intervention found that RIM individuals preferred to be grouped with others who identified with the same gender (Svensson et al., 2017). Similarly, other studies have captured RIM women's preference for female doctors, particularly when receiving SRH and maternal health care (Yeo et al., 2023). Furthermore, positive health outcomes among migrants have been cited in the literature when members of their community are trained to deliver health interventions (Bouaddi et al., 2023). Cultural sensitivity in health care is fundamental in achieving the best possible health outcomes.

## RESEARCH RATIONALE

As demonstrated by the literature, SRH and maternal health care for RIM women is a multifaceted issue that needs to be addressed to eliminate the significant health disparities this population experiences. Various studies have clearly indicated the education, communication, and cultural barriers that RIM populations face when accessing healthcare. However, to my knowledge, there are no programs or studies that have evaluated culturally tailored programs

designed to educate RIM populations on SRH and maternal health topics and patient communication skills.

Outcome evaluations provide information about the observed changes produced by a program and are often undertaken to determine a program's effectiveness on intended outcomes. Furthermore, an outcome evaluation can be used to inform decisions about whether a program should be replicated and/or scaled in different settings. As *Healthy Moms* addresses pregnancy-related mortality and morbidity determinants, the program has received national attention and requests for curricular content. The primary objectives of the study are to assess the changes in self-reported patient communication self-efficacy and sexual and maternal health knowledge acquisition among RIM women who participate in the eight-week *Healthy Moms* program. While this study does not test scalability, it can provide the Embrace team with context around program effectiveness which can be used to make curricular adjustments, if needed.

## METHODS AND PROCEDURES

### Overview of *Healthy Moms*

The *Healthy Moms* curriculum consists of eight modules and is delivered to mothers and mothers-to-be of various education levels, languages and linguistic abilities, and countries (Embrace Refugee Birth Support, n.d.). The program is designed to be delivered once a week over a series of eight weeks. The curriculum is supplemented by demonstrations, props, and engaging discussions among the women about their personal experiences. The classes are taught at the Embrace facility in Clarkston, GA. Embrace volunteers are utilized to provide transportation and childcare for *Healthy Moms* clients to facilitate attendance. Classes are taught by women from the local community who are certified childbirth educators. They also provide interpretation for curricular content, as needed. The class series was developed with the overall

goal to improve health and birth outcomes, educate about childbirth obstetric procedures, empower women to make informed choices about pregnancy and labor, facilitate confidence in newborn caretaking, and to increase understanding of gynecological care and family planning. See Table 1 for a brief overview of the topics discussed in each module (Embrace Refugee Birth Support, n.d.).

**Participants**

Mothers and pregnant women who registered for the *Healthy Moms* class series at Embrace during the winter of 2024 participated in the evaluation. Participants registered for the program online through a registration form or in person at the Embrace facility. Embrace staff conducted a registration intake with participants prior to starting the classes. Any participants who attended the *Healthy Moms* classes virtually or did not complete both baseline and follow-up assessments were excluded from the evaluation. Participants were 18 years and older and settled in Clarkston, Georgia from Afghanistan and the Democratic Republic of the Congo.

**Procedures**

Baseline data collection began at the start of the second class, before the introduction of new class material. All evaluation material was translated and distributed in either Dari or Swahili. The researcher read the informed consent form aloud to each class as an Embrace staff member provided interpretation and received their written consent to participate in the evaluation. Similarly, the baseline and follow-up surveys were administered by the researcher and Embrace personnel. Each question was read and answered independently by participants before moving on to the next question. The same survey with an additional scale was administered after the last class of the program.

## Instruments

The baseline and follow-up survey contained two instruments: one which assessed patient communication self-efficacy and one which measured sexual and maternal health knowledge. The seven-item patient communication self-efficacy scale used a seven-point, Likert-type rating that measured level of agreement with statements such as, “I will actively participate in discussing my health and birth plan options with my doctor.” Items were scored so that a high number implied high self-efficacy as it pertains to communicating with their healthcare provider and participating in PCC. This scale was adapted from Gordon and colleagues (2014), an instrument originally created to measure patient communication among asthma patients, to be relevant to pregnancy and birth.

The knowledge acquisition instrument contained a set of 10 items (two true-false, eight check all that apply) that measured knowledge related to pregnancy, birth, and postpartum. The questions were developed by the researcher and Embrace personnel. Each question was derived directly from the curricular content that was delivered to participants. Each item was scored with a 0, 1, or 2 to identify if a question was answered incorrectly, partially correctly, or completely correctly, respectively.

The follow-up survey included an additional scale to measure client satisfaction with the program. The three-item sale used a five-point, Likert-type rating that measured the level of agreement or satisfaction with questions that asked how beneficial the program was, how confidence has changed from learning the curricular content, and to what extent skills learned in the program are utilized. Items were scored so that a high number indicated a high degree of program satisfaction.

The Institutional Review Board at Georgia State University reviewed and approved this evaluation (IRB #H24279).

**Data Analysis**

All survey data was collected on paper and entered into Excel. After the data was entered, cleaned, and coded, it was exported to SPSS for statistical analysis. Descriptive statistics such as frequencies, central tendencies, and standard deviations were conducted to characterize the study population. Paired samples t-tests were used to determine the mean difference in scores at baseline and follow-up for patient communication self-efficacy and level of knowledge acquisition. A one-way ANOVA was conducted to determine whether there were any differences between the Afghanistan and African groups.

## RESULTS

A total of 18 refugee and migrant women participated in the baseline survey; eight of these women also completed the follow-up survey. The baseline sample included ten women from Afghanistan who spoke Dari and/or Pashto and eight women from countries of Africa who spoke Swahili and/or other languages such as Haitian Creole. Participants ranged between 21 and 35 years old (Mean=26.5, SD=5.71). The length of time participants were settled in the U.S. ranged from five months to five years (Mean=2.1 years, SD=2.11). The final sample included six women from Afghanistan who spoke Dari and/or Pashto and two women from the Democratic Republic of the Congo who spoke Swahili. The sociodemographic characteristics of the samples at baseline and follow-up are reported in Table 2.

Prior to program implementation, baseline SRH and MCH knowledge was measured among 18 participants. As Figure 1 demonstrates, most participants answered partially or completely correctly for questions related to healthy pregnancy characteristics (88.8%), labor

techniques (88.9%), breastfeeding (94.5%), and contraception (94.4%). Most participants answered incorrectly for questions related to delivery signs (83.3%), medical induction of labor (61.1%), and the purpose of pap smear screenings (61.1%). A one-way ANOVA revealed that there was a statistically significant difference in knowledge base between the Afghanistan group (Mean=10.50, SD=1.72) and the African group [Mean=7.29, SD=12.14; F(1, 15) = [11.833], p=0.004)].

A paired samples t-test showed that the participants' level of knowledge increased from baseline (Mean=9.75, SD=1.98) to follow-up (Mean=11.38, SD=2.67; t(7)=-1.72, p=0.129), though results were not statistically significant. A paired samples t-test showed that the participants' level of communication self-efficacy with providers increased from baseline (Mean=36.57, SD=8.73) to follow-up (Mean=46.00, SD=2.77; t(6)=-2.92, p=0.027).

At the end of the program, the participants (n=8) had a high level of program satisfaction (Mean=11.38, SD=0.74). All participants reported 'quite a bit' or 'extremely' for all items, illustrated in Figure 2.

## DISCUSSION

Embrace is missioned to empower refugee women through support, advocacy, and education as they experience pregnancy and childbirth in the United States. Despite reported successes and demonstrated positive birth outcomes from Embrace's programs, the *Healthy Moms* class series has never been formally evaluated. This research highlights programmatic outcomes on health empowerment, as represented by participant communication self-efficacy and maternal and child health expertise measures.

Findings from this evaluation indicated that there was a significant increase in patient-provider communication self-efficacy from the start of the program until the end, demonstrating

increased personal beliefs of the ability to exercise health care rights during pregnancy and childbirth. Though the evaluation did not find significant increases in knowledge acquisition, scores trended positively and may have reached statistical significance with a larger sample size. Most notably, at program entry, the results revealed topic areas in which participants were relatively knowledgeable or demonstrated deficits. Over half of the participants were either partially or completely correct for questions that asked about healthy pregnancy characteristics, techniques to help labor progress normally, epidural risks, the benefits of breastfeeding, postpartum depression symptoms, and the purpose of contraceptive methods. A caveat to note, however, it that a large proportion of questions were answered partially correctly, meaning at least one of the four multiple-choice items chosen was correct. Participants that answered questions completely correctly ranged from 6% to 44%, with the contraceptive question serving as an outlier with 94% of participants answering correctly. Over half of the participants answered incorrectly for questions that asked about signs the baby is ready to be delivered, when medical induction of labor should be used, and the purpose of a pap smear. The question that asked about delivery signs tested participants' knowledge of the length and timing of contractions that signifies labor is near and it's time to go to the hospital. Just over 80% of participants answered this question incorrectly. Furthermore, the women in the Afghanistan cohort answered more test questions correctly than the African cohort at program entry. These findings have particular implications for the Embrace *Healthy Moms* curricular content. For instance, topic areas that presented knowledge deficits may need additional focus during the classes. Overall baseline knowledge differences between groups also demonstrate a possible need for further cultural adaptation in curricular content dependent on the participant countries of origin.

The current findings are aligned with the research around SRH patient communication and knowledge acquisition among RIM women. Increased self-efficacy among participants is hypothesized to be a result of the comprehensive teachings about pregnancy, childbirth, and postpartum. A common communication barrier reported by both RIM women and healthcare providers is inadequate knowledge about female anatomy, contraceptives, and SRH generally (Patel et al., 2021; Filler et al., 2020). Additionally, a qualitative study conveyed self-reported misconceptions and inadequate knowledge about cervical cancer screening (Metusela, et al., 2017). This corresponds with our results that indicated over half of the participants did not know the purpose of a pap smear. Participants reported the purpose of pap smear screenings was to identify pregnancy status, examine a fetus, and screen for sexually transmitted infections. A surprising finding, however, is that the majority of participants knew that contraceptive methods were used in pregnancy prevention, despite the literature acknowledging common cultural beliefs about the ineffectiveness of contraceptives (Kaczkowski & Swartout, 2020; Metusela, et al., 2017; Lirios, et al., 2022).

**Study Limitations**

Several limitations were present in this outcome evaluation that must be taken into consideration. There were cultural challenges present during data collection that could not be accounted for. Many participants had difficulty understanding and answering the style of assessment questions. The Patient Communication Self-Efficacy instrument had only Likert-style questions, which participants had difficulty discerning between response options. Additionally, the majority of knowledge acquisition test questions were structured as ‘circle all that apply.’ Several participants did not understand that they could select more than one multiple-choice option, which may have contributed to the large proportion of partially correct answers. Most

notably, the instruments used in the study have not been validated which creates concerns about the reliability and accuracy of the collected data. Another limitation regarding the data collection tools is the credibility and accuracy of the translations. The instruments were translated using Tarjimly, an organization that utilizes volunteers to provide interpretation services. On the website, it appears there is not an official vetting process for volunteer interpreters that confirms their ability to provide high-quality and precise translations (Tarjimly, n.d.). That said, the interpreters at Embrace sometimes experienced difficulties reading the material. According to the staff member who provides Swahili interpretation, the data collection instruments were translated in the Kenyan dialect of Swahili, which differs from the dialect used in the Democratic Republic of the Congo. This resulted in reading and comprehension difficulties among the interpreter and participants.

The study design also presented limitations as the evaluation only collected and analyzed data from one *Healthy Moms* class series (of several that are taught each year). Therefore, it is not possible to generalize the findings to other classes with different participants – especially those from different countries of origin – or to other organizations offering similar programs. The evaluation modeled a pre-post study design; however, due to unanticipated delays in receipt of approval by the Institutional Review Board, the pre-program survey was not administered before program implementation. Rather, it was administered the week after the first class and at the start of the second class before the material was taught. Additionally, the sample was relatively small at baseline and had a significant loss to follow-up as many of the women approached their due date or gave birth by the end of the program.

## Future Research

While the study provided invaluable information as to the efficacy of the *Healthy Moms* program, several questions remain unanswered. The current findings do not definitively determine if the program is effective in increasing patient communication self-efficacy or sexual and MCH knowledge acquisition. Due to the small sample size, accurate and generalizable conclusions cannot be made. Another outcome evaluation with a mixed methods design should be conducted with a larger sample size and aggregated data from at least two *Healthy Moms* series in a year. If possible, indicators should be measured using instruments that are validated in each population being observed. The qualitative component of the evaluation will provide the Embrace team with participant insights into perceived helpfulness, cultural resonance with the material, and areas for programmatic improvement. Additionally, an external evaluation team that has the capacity to provide their own interpretation and translation services should conduct the evaluation to minimize bias. Scalability testing should also be conducted.

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## TABLES AND FIGURES

**Table 1. *Healthy Moms* curriculum overview**

| Module | Description |
|---|---|
| 1 | Changes in body during pregnancy, prenatal care; characteristics of a safe and healthy pregnancy |
| 2 | Characteristics of a normal, healthy, and natural birth; positive coping mechanisms |
| 3 | Labor positions; relaxation techniques |
| 4 | Routine procedures, obstetric interventions, and medications |
| 5 | Obstetric interventions; pain management options; pushing positions; assisted deliveries; cesarean delivery basics |
| 6 | Obstetric interventions; newborn procedures; healthcare provider communication techniques |
| 7 | Newborn caretaking; infant nutrition; breastfeeding |
| 8 | Postpartum recovery; women's reproductive health care; the fertility cycle; family planning |

**Table 2. Sociodemographic Characteristics of the Sample**

| Characteristics | Baseline (n=18) | Follow-Up (n=8) |
|---|---|---|
| | N (%)/ Mean (SD) | |
| Age | 26.83 (5.71) | 26.50 (4.81) |
| Language | | |
| Dari | 6 (33.3) | 4 (50) |
| Pashto | 4 (22.2) | 2 (25) |
| Swahili | 5 (27.8) | 2 (25) |
| Other | 3 (16.7) | - |
| Country of Origin | | |
| Afghanistan | 10 (55.6) | 6 (75) |
| DRC | 6 (33.3) | 2 (25) |
| Other | 2 (11.1) | - |
| Length of Time in United States | 2.63 (1.85) | 2.11 (1.46) |
| Gestational Age | 30.11 (5.30) | 26 (4.21) |
| **Birth History** | | |
| Living Children | 1.78 (2.10) | 1.88 (1.64) |
| Vaginal Birth | 1.61 (2.25) | 1.75 (1.91) |
| Cesarean Birth | 0.33 (0.59) | 0.50 (0.76) |

N = number of participants, M = Mean, SD = Standard Deviation, DRC = Democratic Republic of the Congo

**Figure 1. Distribution of Knowledge Acquisition Test Answers at Baseline**

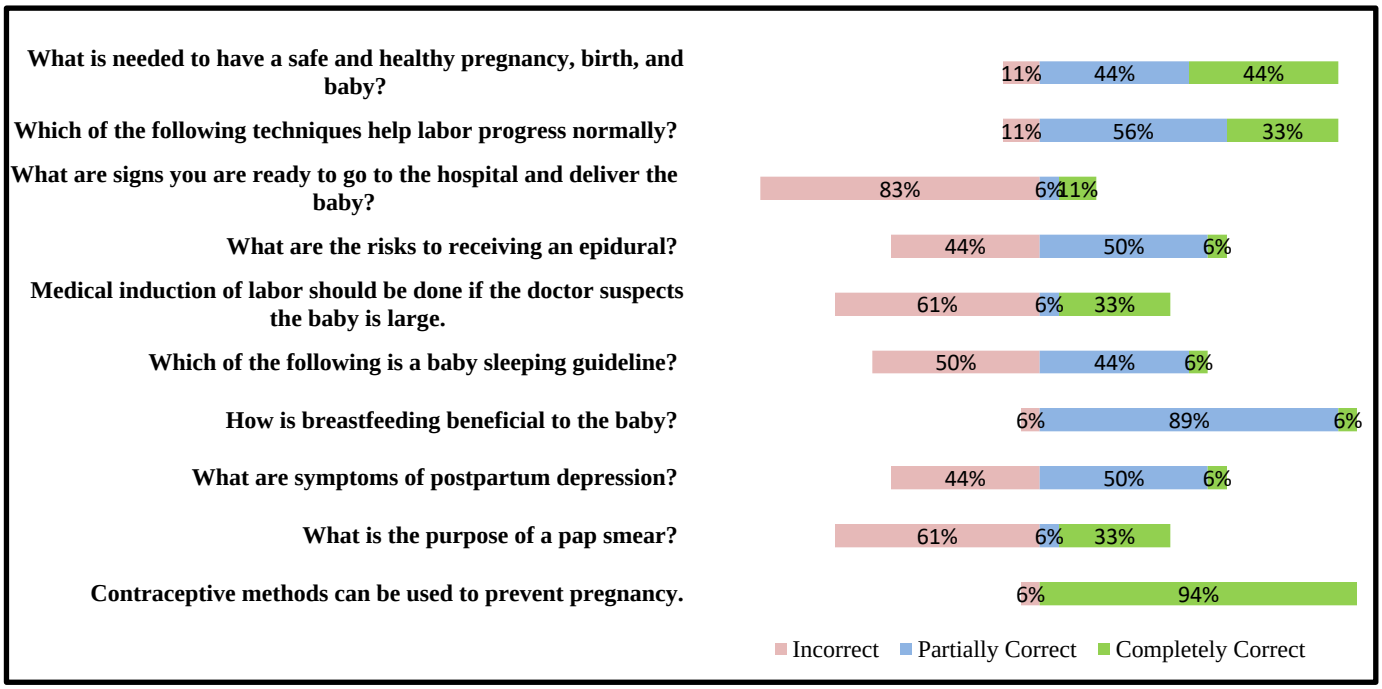
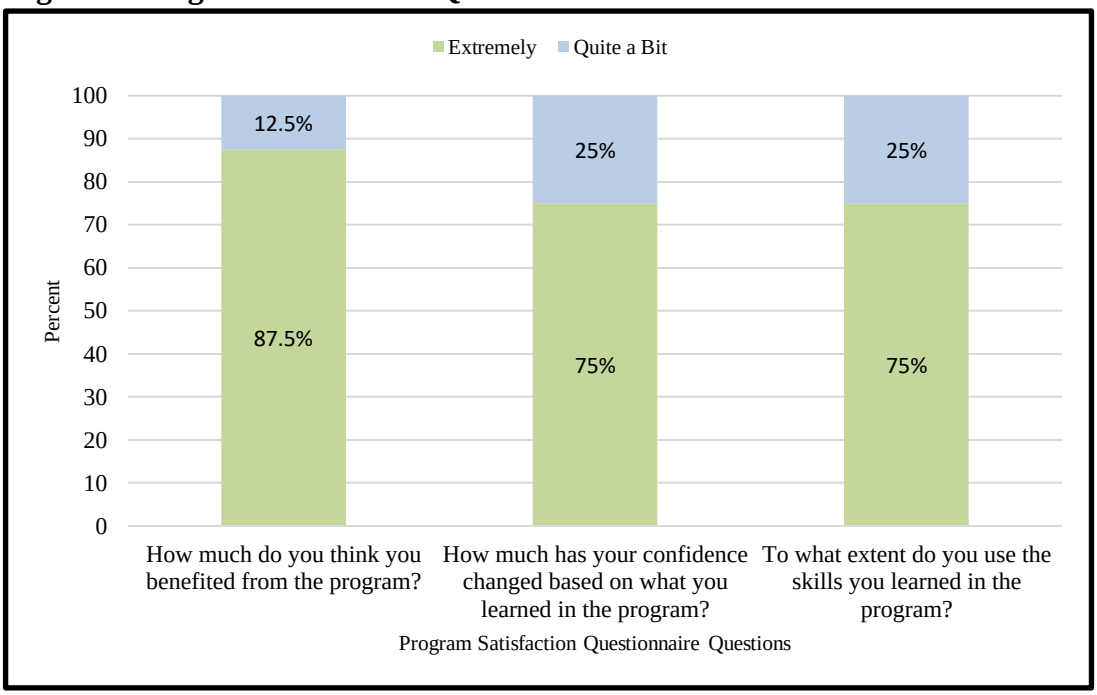


**Figure 2. Program Satisfaction Questionnaire Answers**



# APPENDICES

## Data Collection Instruments

### *Patient Communication Self-Efficacy Scale in English*

| | Completely Disagree | Somewhat Disagree | Disagree | Neutral | Agree | Somewhat Agree | Completely Agree |
|---|---|---|---|---|---|---|---|
| I can understand any treatment options that may be suggested by my doctor during my pregnancy and birth | | | | | | | |
| I can ask the right kind of questions to get the information I need about pregnancy and birth | | | | | | | |
| I will actively participate in discussing my health and birth plan options with my doctor | | | | | | | |
| My input will get me the best care possible | | | | | | | |
| I can ask for interpretation services if I cannot understand the language my doctor is speaking | | | | | | | |
| I have no problem telling my doctor my concerns and opinions about my treatment options during birth | | | | | | | |
| I can carry through the birth plan I have chosen | | | | | | | |

***Patient Communication Self-Efficacy Scale in Dari***

| | کاملاً مخالف | تا حدی مخالف | مخالف | بی طرف | موافق | تا حدی موافق | کاملاً موافق |
|---|---|---|---|---|---|---|---|
| من هر نوع تدوای که وسط داکتر در دوران ی و ولادت پیشن شود نم | | | | | | | |
| من میتوانم ای مناسب را ست آوردن ت مورد ر باره بارداری ولادت | | | | | | | |
| من به طور فعال در بحث کردن در مورد صحمتم و گزینه های طرح ولادت با داکتر خود شرکت خواهم کرد | | | | | | | |
| مشار کت من ممکن برایم بهترین مراقبت صحی را فراهم خواهد کرد | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| من میتوانم از خدمات ترجما استفاده کنم اگر نتوانم زبانی که داکتر صحبت میکند بف | | | | | | | |
| من هیچ مشکلی ندارم که نگرانی ها و نظریه های خود را در مورد گزینه های تداوی در دوران ولادت به داکتر بگویم | | | | | | | |
| من میتوانم برنامه ولادت را که انتخاب کرده ام اجرا کنم | | | | | | | |

***Patient Communication Self-Efficacy Scale in Swahili***

| | Sikubaliani Kabisa | Sikubaliani Kwa Kiasi | Sikubaliani | Si upande wowote | Kubaliana | Kubaliana Kwa Kiasi | Kubaliana Kabisa |
|---|---|---|---|---|---|---|---|
| Ninaweza kuelewa chaguo za matibabu ambazo zinaweza kupendekezwa na daktari wangu wakati wa ujauzito na kujifungua | | | | | | | |
| Ninaweza kuuliza maswali yaliyo sahihi ili kupata taarifa ninayohitaji kuhusu ujauzito na kujifungua | | | | | | | |
| Nitashiriki kikamilifu katika kujadili chaguo zangu za afya na mpango wa kujifungua na daktari wangu | | | | | | | |
| Maoni yangu tanisaidia kupata utunzaji bora zaidi | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Ninaweza kuomba huduma za ukalimani ikiwa sielewi lugha ambayo daktari wangu anazungumza | | | | | | | |
| Sina tatizo kumwambia daktari wangu wasiwasi wangu na maoni yangu kuhusu chaguo zangu za matibabu wakati wa kujifungua | | | | | | | |
| Ninaweza kutekeleza mpango wa kujifungua ambao nimechagua | | | | | | | |

***Healthy Moms Knowledge Acquisition Test in English***

1. What is needed to have a safe and healthy pregnancy, birth, and baby? (Circle all that apply)
    a. Prenatal care
    b. Safety
    c. Healthy food
    d. Daily exercise

2. Which of the following techniques help labor progress normally? (Circle all that apply)
    a. Walking
    b. Having a support person
    c. Laying in bed
    d. Moving around

3. What are signs you are ready to go to the hospital and deliver the baby? (Circle all that apply)
    a. 30 second contractions that happen every 10 minutes for an hour
    b. 45 second contractions that happen for an hour and then stop
    c. 1-minute contractions that happen every 3 minutes for an hour
    d. 1-minute contractions that happen once every hour

4. What are the risks to receiving an epidural? (Circle all that apply)
    a. It can speed labor up
    b. It can involve other interventions like the use of Pitocin
    c. It can make pushing difficult
    d. Increased risks for cesarean section

5. Medical induction of labor should be done if the doctor suspects the baby is large
    a. True
    b. False

6. Which of the following is a baby sleeping guideline? (Circle all that apply)
    a. Baby should sleep on its back
    b. Baby should sleep on its stomach
    c. Baby should sleep wrapped in blankets
    d. Baby should be put to sleep far away from the parents

7. How is breastfeeding beneficial to the baby? (Circle all that apply)
    a. Provides the baby with nutrients that aren’t found in formula
    b. Helps with brain development
    c. Increases bonding between baby and other family members
    d. Decreases risk for longer-term health problems

8. What are symptoms of postpartum depression? (Circle all that apply)
    a. Consistent feelings of extreme sadness and hopelessness

b. Baby blues a couple of days after birth
c. Trouble breathing
d. Normal heart rate

9. What is the purpose of a pap smear? (Circle all that apply)
    a. To determine if you're pregnant
    b. To screen for cancer of the cervix
    c. To examine a fetus
    d. To screen for sexually transmitted diseases/infections

10. Contraceptive methods can be used to prevent pregnancy
    a. True
    b. False

***Healthy Moms Acquisition Test in Dari***

۱. چه چیزی لازم است برای داشتن یک بارداری، ولادت، و نوزاد محفوظ و سالم ؟ (تمام موارد که صحیح است دایره کنید)

ا. مراقبت های دوران بارداری
ب.محفوظیت
ج.غذای سالم
د. ورزش روزانه

۲. کدام یک از طریق های ذیل به پیشرفت ولادت نارمل کمک میکند؟ (تمام موارد که صحیح است دایره کنید)

ا. قدم زدن
ب.داشتن یک شخصی کمک کننده
ج. دراز کشیدن در تخت خواب
د. حرکت کردن در چهار اطراف

۳. چه نشانه ها نشان میدهد که شما برای رفتن به شفاخانه و ولادت آماده هستید؟ (تمام موارد که صحیح است دایره کنید)

ا. دردِ ۳۰ ثانیه ای که هر ۱۰ دقیقه بعد برای یک ساعت رخ میدهد
ب. درد ۴۵ ثانیه ای که برای یک ساعت رخ میدهد و بعداً متوقف میشود
ج. درد ۱ دقیقه ای که هر ۳ دقیقه بعد برای یک ساعت رخ میدهد
د. درد ۱ دقیقه ای که در یک ساعت یک بار رخ میدهد

۴. خطرات استفاده از پیچکاری اپیدورال (کمر)چیست؟ (تمام موارد که صحیح است دایره کنید)

ا. میتواند ولادت را سریع تر کند
ب. این میتواند شامل مداخلات دیگر شود مانند استفاده از پیتوسین
ج. این طریق میتواند فشار دادن را سخت کند
د. افزایش خطرات برای جراحی (سی-سیکشن(

در صورت که داکتر گمان کند که طفل بزرگ هست باید ولادت از طریق روش های غیر طبیعی آغاز شود

ا. درست است
ب. اشتباه است

کدام یک از موارد ذیل یک راهنمای طریق خواب نوزاد است؟ (تمام موارد که صحیح است دایره کنید)

ا. نوزاد باید روی پشت شان بخوابن
ب. نوزاد باید روی شکم بخوابن
ج. نوزاد باید در کمپل پیچانده شود و بخوابن
د. نوزاد باید دور از والدین گزاشته شوند برای خوابیدن

شیر مادر چگونه برای نوزاد مفید است؟ (تمام موارد که صحیح است دایره کنید)

ا. برای نوزاد مواد مغذی را فراهم میکند که در شیر خشک نمیباشد.
ب. به رشد مغز کمک می کند
ج. پیوند بین نوزاد با سایر اعضای خانواده را افزایش میدهد
د. خطرات مشکلات صحی طولانی مدت را کاهش میدهد

علائم افسردگی بعد از ولادت چیست؟ (تمام موارد که صحیح است دایره کنید)

ا. احساس غم و ناامیدی شدید مداوم
ب. چند روز بعد از تولد نوزاد آبی میشود
ج. مشکل در تنفس
د. ضربان قلب نارمل

هدف از آزمایش پاپ چیست؟ (تمام موارد که صحیح است دایره کنید)
ا. برای تعیین اینکه آیا شما حامله هستید
ب. برای معلوم کردن سرطان دهانه رحم
ج. برای معاینه طفل در دوران بارداری
د. برای معلوم کردن بیماری ها/عفونیات منتقل شده از طریق تماس جنسی

طریقه های ضدبارداری برای جلوگیری از حاملگی استفاده میشود
ا. درست است
ب. اشتباه است
سوالات رضایت اشتراک کننده

***Healthy Moms Acquisition Test in Swahili***

1. Ni nini kinachohitajika ili kupata mimba salama na yenye afya, kuzaliwa, na mtoto? (**Zungushia yote yanayofaa**)
    a. Utunzaji wa ujauzito
    b. Usalama
    c. Chakula cha afya
    d. Zoezi la kila siku

2. Ni ipi kati ya mbinu zifuatazo zinazosaidia kujifungua kuendelea kawaida? (**Zungushia yote yanayofaa**)
    a. Kutembea
    b. Kuwa na mtu wa msaada
    c. Kulala kitandani
    d. Kuzunguka
3. Je, ni dalili zipi utaona na ujue kwamba uko tayari kwenda hospitali na kujifungua mtoto? (**Zungushia yote yanayofaa**)
    a. Mikazo ya sekunde 30 ambayo hufanyika kila dakika 10 kwa saa
    b. Mikazo ya sekunde 45 ambayo hutokea kwa saa moja na kisha kuacha
    c. Mikazo ya dakika 1 ambayo hufanyika kila dakika 3 kwa saa
    d. Mikazo ya dakika 1 ambayo hutokea mara moja kila saa

4. Je! ni hatari/madhara gani ya kupata epidural? (**Zungushia yote yanayofaa**)
    a. Inaweza kuongeza kasi ya kujifungua
    b. Inaweza kuhusisha matumizi ya vitu zingine kama vile matumizi ya Pitocin
    c. Inaweza kufanya kusukuma mtoto kuwa ngumu
    d. Kuongezeka kwa hatari ikiwa utajifungua kupitia upasuaji

5. Uingizaji wa matibabu wa kujifungua unapaswa kufanywa ikiwa daktari anashuku kuwa mtoto ni mkubwa
    a. Ukweli
    b. Uongo

6. Ni ipi kati ya zifuatazo ni mwongozo wa kulala kwa mtoto? (**Zungushia yote yanayofaa**)
    a. Mtoto anapaswa kulala chali
    b. Mtoto anapaswa kulalia tumbo lake
    c. Mtoto anapaswa kulala amevikwa blanketi
    d. Mtoto anapaswa kulala mbali na wazazi

7. Je, kunyonyesha kuna manufaa gani kwa mtoto? (**Zungushia yote yanayofaa**)
    a. Humpa mtoto virutubishi ambavyo havipatikani kwenye fomula
    b. Husaidia ukuaji wa ubongo
    c. Huongeza uhusiano kati ya mtoto na wanafamilia wengine
    d. Hupunguza hatari ya matatizo ya kiafya ya muda mrefu

**8.** Dalili za msongo wa mawazo baada ya kujifungua ni nini? **(Zungushia yote yanayofaa)**

a. Hisia thabiti za huzuni kali na kutokuwa na tumaini
b. Kuhisi woga woga siku kadhaa baada ya kujifungua
c. Kupumua kwa shida
d. Kuwa na kiwango cha moyo cha kawaida

9. Madhumuni ya uchunguzi wa pap smear ni nini? (**Zungushia yote yanayofaa**)

a. Ili kujua kama wewe ni mjamzito
b. Kuchunguza saratani ya shingo ya kizazi
c. Kuchunguza mtoto anayekua
d. Kuchunguza magonjwa ya zinaa/maambukizi

10. Njia za uzazi wa mpango zinaweza kutumika kuzuia mimba

a. Kweli
b. Uongo

***Program Satisfaction Scale in English***

| | **Not at all** | **A little bit** | **Moderately** | **Quite a bit** | **Extremely** |
|---|---|---|---|---|---|
| How much do you think you benefitted from the program? | | | | | |
| How much has your confidence changed based on what you learned in the program? | | | | | |
| To what extent do you use the skills you learned in the program? | | | | | |

***Program Satisfaction Scale in Dari***

| | اصلاً نه | کمی | متوسط | کمی زیاد | بسیار زیاد |
|---|---|---|---|---|---|
| شما چقدر فکر میکنید که از این برنامه فایده مند شده آید؟ | | | | | |
| چقدر اعتماد به نفس بودن تان تغییر کرده است بر بنیاد انچه که شما در این برنامه یادگرفتید؟ | | | | | |
| مهارت های که در این برنامه یادگریفته آید تا چی حدی استفاده میکنید؟ | | | | | |

***Program Satisfaction Scale in Swahili***

| | **Hapana kabisa** | **Kiasi** | **wastani** | **Sana** | **Sana Kabisa** |
|---|---|---|---|---|---|
| Ni kwa kiwango gani unahisi umesaidika na programu hii? | | | | | |
| Je, imani yako imebadilika kwa kiasi gani kulingana na ulichojifunza kwenye programu? | | | | | |
| Je, unatumia kwa kiasi gani ujuzi uliojifunza katika programu? | | | | | |